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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. 09/480,076
Filing Date January 10, 2000
Inventor Rickie C. Lake
Assignee Micron Technology, Inc.
Group Art Unit 1733
Examiner J. Haran
Attorney's Docket No. MI40-274
Title: Method of Conductively Interconnecting Electronic Components, Battery Powerable
Apparatus, Radio Frequency Communication Device, and Electric Circuit

Sir:

The following Supplemental Declaration supplements, and incorporates herein by reference, the previously submitted 37 C.F.R. §1.132 Declaration of Rickie C. Lake filed February 23, 2004.

SUPPLEMENTAL DECLARATION OF RICKIE C. LAKE UNDER 37 C.F.R. '1.132

I, Rickie C. Lake, hereby swear and state:

- 1.) I am the inventor of the subject matter of the above-referenced application.
- 2.) I provided the information of the Invention Disclosure attached hereto which supports the subject matter of the above-referenced application.
- 3.) That the "non-Z6040 bearing conductive epoxy" referred to in the Invention Disclosure is an exemplary conductive epoxy adhesive that does not contain epoxy terminated silane and can be used to bond with nickel surfaces and/or batteries.

4.) That the Invention Disclosure demonstrates that I performed a comparison of the electrical conductivity of the claimed conductive epoxy adhesive with silane additives bonded to a nickel surface of a battery versus the electrical conductivity of the non-Z6040 bearing conductive epoxy bonded to a nickel surface of a battery.

5.) That the comparison and stated findings are proof that an electrically conductive epoxy adhesive with silane additives has better electrical conductivity with a nickel surface of a battery than the non-Z6040 bearing conductive epoxy used to bond to a nickel surface of a battery.

6.) I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and, further, that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: 7-23-04



RICKIE C. LAKE



INVENTION DISCLOSURE



1. INVENTOR(S): Rick Lake

2. DESCRIPTION

2.1 Title of invention: Improving Electrical Conductivity of Electrical Conductive Epoxies Using Silane Coupling Agent.

2.2 Brief description: A small amount of [REDACTED] Z6040 Silane Agent [REDACTED], in a [REDACTED] conductive epoxy, has been found to significantly improve the electrical conductivity of the conductive epoxy.

2.3 Also attach a complete description, including drawings or sketches and articles relevant to the invention. Legible photocopies of laboratory notebooks are acceptable.

[REDACTED] Z6040 silane additive is added to a conductive epoxy, [REDACTED] and then mixed with [REDACTED] hardener [REDACTED]. A typical mix would be [REDACTED] epoxy base resin, [REDACTED] hardener, and [REDACTED] Z6040 silane.

For example, I have found that a non-Z6040 bearing conductive epoxy as described above can have high and erratic contact resistances, typically anywhere from 2 ohms to 200 ohms, when [REDACTED] applied to the surface of an [REDACTED] coin cell battery in a [REDACTED] dot, [REDACTED]. With a Z6040 bearing mixture as described above, the same [REDACTED] dot can measure anywhere from negligible, to 2 ohms. It is believed that the Z6040 improves wetting of the conductive epoxy to the battery metal enclosure.

3. INFORMATION CONCERNING CONCEPTION OF INVENTION

3.1 CONCEPTION AND DOCUMENTATION OF THE INVENTION

a. Identify the date when you first conceived the invention. (If not sure, give the earliest date of which you are sure.)

[REDACTED]

b. To whom was the idea first described and on what date? (Other than a co-inventor.)

[REDACTED]

c. Identify the date of the first tangible record such as computer simulation, tape out, drawing or written description. Please specify type and location.

[REDACTED]

3.2 CONCEPTION OF THE INVENTION

- a. Please identify related invention disclosures, patents or other publications describing similar ideas, and other companies working in the same field. Attach copies, if available.

[REDACTED]

- b. What is the closest technology, of which you are aware?

[REDACTED]

- c. Identify the advantages of this invention over previous technology.

[REDACTED]

3.3 IMPORTANT DATES

- a. Has the invention been disclosed outside the company? ____
If yes, to whom, when, and in what form?

[REDACTED]

- b. Have any articles describing your invention been published?
If yes, list author(s), title of article, publication and date.

[REDACTED]

- c. Have any engineering samples been given out? ____ If yes, to whom and on what date?

[REDACTED]

- d. Has any product using the invention been sold or offered for sale? ____ If yes, to whom and on what date?

[REDACTED]

3.4 DISPOSITION OF THE INVENTION

- a. When will (or did) Micron begin use of the invention experimentally?

[REDACTED]

- b. When will (or did) Micron begin production of this invention?

[REDACTED]

3.5 MISCELLANEOUS INFORMATION

- a. Was the invention developed during a joint development agreement or other contract with an outside company? _____

[REDACTED]

- b. Please list developmental work outside of the company (including Government proposal or contract).

4. INVENTORS:

Name: Rick Lake

Company Name (VERY IMPORTANT):

Dept. Name: Assembly Development

Dept. #: _____

- ☐ Micron Technology, Inc.
☐ Micron Electronics, Inc.
☐ Micron Quantum Devices
☐ Micron Display Technology, Inc.
☒ Micron Communications, Inc.
☐ Other _____

Home Address: _____

Citizenship: US

Supervisor: Mark Tuttle

Signature: _____

Date: _____

5. WITNESS

If there is only one inventor, a witness should sign and date this disclosure. A witness in this case is a non-inventor who understands the nature of the invention.

(Signature of Witness)

(Date)